

REMARKS***Summary of the Amendment***

Upon entry of the *Listing of Claims*, claims 1 – 53 will remain pending.

Summary of the Official Action

In the instant Office Action, the Examiner has rejected claims 1 – 53 based upon formal matters and over the art of record. By the present amendment and remarks, Applicants submit that the rejections have been overcome, and respectfully request reconsideration of the outstanding Office Action and allowance of the present application.

Traversal of Rejection Under 35 U.S.C. § 112, First Paragraph

Applicants traverse the rejection of claims 1 – 53 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner asserts the phrase “integrally formed” has not been described in the specification to convey that Applicants had possession of this feature of the invention at the time the application was filed. Applicants traverse the Examiner’s assertions.

As discussed in Applicants’ previous response, support for the term “integrally formed” can be found in the originally submitted drawings, particularly Figures 3a and 3b. A review of these original figures reveals that the lamella and the structures formed in the lamella surface are formed as one piece. Moreover, these original figures also reveal that the lamellas and the structures formed on the lamella surface are formed as one piece. Thus, Applicants submit the structures formed in or on the surface of the lamella are formed in one piece with each other, such that the these structures are integrally formed in or on the surface of the lamella.

Moreover, Applicants refer the Examiner to, e.g., paragraph [0064] of Applicants’

specification, which states "structured lamella end 11.1 may be *embodied or formed with a grooved structured surface 22.*" Thus, as this disclosure provides that the lamella is *formed* with a grooved structure, it is clear the inventors possessed the feature of the grooved structure formed as part of the lamella at the time of the invention, and this disclosure provides sufficient support for the recitation "integrally formed" in the pending claims.

Accordingly, Applicants request the Examiner reconsider and withdraw the rejection of claims 1 – 53 under 35 U.S.C. § 112, first paragraph, and indicate the claims are fully in compliance with the requirements of the statute.

Traversal of Rejection Under 35 U.S.C. § 112, Second Paragraph

Applicants traverse the rejection of claims 1 – 53 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants traverse the Examiner's assertions.

For the reasons set forth above, the recitation in the pending claims of "integrally formed" is fully supported, such that one ordinarily skilled in the art reviewing the specification and claims would readily understand the invention and the scope of the claims.

In particular, Applicants submit one ordinarily skilled in the art reviewing the original disclosure and the pending claims would understand that structures formed in or on the lamella surface are formed in one piece with the lamella. Moreover, Applicants submit the original figures show the lamellas and the structures formed in or on the lamella surface are formed as one piece. Moreover, as, e.g., paragraph [0064] of Applicants' specification provides support for a recitation of "integrally formed," ("structured lamella end 11.1 may be *embodied or formed with a grooved structured surface 22*"), one ordinarily skilled in the art

would readily understand the invention and be able to ascertain the scope of the claims.

Accordingly, Applicants request the Examiner reconsider and withdraw the rejection of claims 1 – 53 under 35 U.S.C. § 112, second paragraph, and indicate the claims are fully in compliance with the requirements of the statute.

Traversal of Rejection Under 35 U.S.C. § 102(b)

Applicants traverse the rejection of claims 1 – 3, 11, 15, 17 – 23, 31, 35, 37 – 42, 44, and 48 – 50 under 35 U.S.C. § 102(b) as being anticipated by RUF et al. (U.S. Patent No. 5,645,689) [hereinafter “RUF”]. The Examiner asserts that RUF shows all of the recited features, including a structure 9.6 in lamella 8.6, as shown in Figure 6. Applicants traverse the Examiner’s assertions.

Applicants’ independent claim 1 recites, *inter alia*, said downstream lamella end comprising a first surface, a portion coupled to and sloped relative to said first surface, and a second surface, located opposite said first surface, provided with a structured end adjacent said sloped portion and having at least one structure *integrally formed* in or on said second surface. Applicants’ independent claim 22 recites, *inter alia*, said downstream lamella end comprising a first surface, a portion coupled to and sloped relative to said first surface, and a second surface, located opposite said first surface, being a structured surface having at least one structure *integrally formed* in or on said second surface. Applicants’ independent claim 42 recites, *inter alia*, said downstream end comprising a sloped surface obliquely oriented with respect to and coupled to said first surface and a second surface formed as a structured surface having at least one structure *integrally formed* in or on said second surface. Applicants submit RUF fails to show at least the above-noted features of at least the independent claims.

Applicants note that any "structures" formed in RUF are added to the lamella, and not integrally formed, as recited in at least independent claims 1, 22, and 42. Thus, Applicants submit RUF fails to disclose at least the above-noted features of the present invention.

Moreover, in contrast to the instant invention, which includes a lamella as a unitary element having structures formed in or on the lamella surface, Figure 6 of RUF shows a "structure," as identified by the Examiner, attached to the lamella. As a result, Applicants submit RUF fails to provide any disclosure of lamella having structures integrally formed, i.e., in one piece with, in or on the lamella surface, as recited in at least independent claims 1, 22, and 44.

Because RUF fails to disclose at least the above-noted feature, Applicants submit that this document fails to disclose each and every recited feature of the instant invention. Thus, Applicants submit that the RUF fails to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b) and that the instant rejection should be withdrawn.

Further, Applicants submit that, as RUF fails to anticipate the above-noted features with regard to the recited lamella and headbox, RUF certainly fails to disclose any of the subject matter related to the arrangement of the lamella elements and/or arrangement of the lamella within the headbox, as recited in at least claims 2, 3, 11, 15, 17 - 21, 23, 31, 35, 37 - 42, and 48 - 50. Moreover, Applicants submit that, as these claims recite additional features and/or arrangements of the lamella and/or headbox, these claims are separately patentable over RUF. In particular, Applicants submit that RUF fails to anticipate, *inter alia*, the lamella is structured and arranged to be mounted within the headbox nozzle supplying

a suspension for forming paper, cardboard or tissue machine, as recited in claim 2; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 3; in combination with the headbox, wherein said lamella is located within the headbox nozzle and the upper nozzle wall in the area of the exit opening is coupled to an adjustable screen, and wherein said sloped portion is positioned toward the adjustable screen, as recited in claim 11; said lamella has a length that is at least about 80% of the nozzle length, as recited in claim 15; said lamella is structured and arranged to be mounted in a headbox with sectioned consistency control, as recited in claim 17; said lamella is structured and arranged to be mounted in a headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 18; the stream velocity is more than about 1,800 m/s, as recited in claim 19; said lamella is structured and arranged to be mounted in a multi-layer headbox, as recited in claim 20; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 21; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 23; an adjustable screen coupled to said upper nozzle wall, wherein said sloped portion is positioned toward the adjustable screen, as recited in claim 31; said nozzle has a nozzle length and said lamella has a length that is at least about 80% of said nozzle length, as recited in claim 35; said headbox is structured and arranged for sectioned consistency control, as recited in claim 37; said headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 38; the stream velocity is more than about 1,800 m/s, as recited in claim 39; said headbox comprises in a multi-layer headbox, as recited in claim 40; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 41; said lamella is fixedly mounted in said headbox nozzle, as recited in claim 42; the first surface is

provided with a non-planar surface, as recited in claim 48; the first surface is provided with a non-planar surface, as recited in claim 49; and the first surface is provided with a non-planar surface, as recited in claim 50.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 1 - 3, 11, 15, 17 - 23, 31, 35, 37 - 42, 44, and 48 - 50 under 35 U.S.C. § 102(b) and indicate that these claims are allowable.

Traversal of Rejection Under 35 U.S.C. § 103(a)

1. *Over Ruf in view of Sanford*

Applicants traverse the rejection of claims 12, 32, 46, and 51 – 53 under 35 U.S.C. § 103(a) as being unpatentable over RUF in view of SANFORD. The Examiner asserts that, while RUF does not disclose a grooved surface, it would have been obvious to include such a surface in view of the disclosure of SANFORD. Applicants traverse the Examiner's assertions.

While arguably showing integrally formed structures formed in an upper surface of the lamella, SANFORD fails to provide any teaching or suggestion that it would have been obvious to modify RUF to include such structures, such that no proper combination of the applied art can render the instant invention obvious under 35 U.S.C. § 103(a).

Moreover, as SANFORD fails to provide any teaching or suggestion the recited portion coupled to and sloped relative to a first surface, and a second surface, located opposite said first surface, provided with a structured end *adjacent said sloped portion* and having at least one structure integrally formed in or on said second surface, this document fails to provide the requisite motivation or rationale to modify RUF in any manner that would render the instant invention unpatentable.

Because neither applied document teaches or suggests at least one structure integrally formed in or on the second surface adjacent the sloped portion, no proper combination of these documents can render unpatentable the instant invention. Thus, Applicants submit that no proper combination of the applied art can render unpatentable the combination of features recited in at least independent claims 1, 22, and 44.

Moreover, while acknowledging that SANFORD shows a lamella having grooves forming in the lamella surface, Applicants submit that the art of record fails to provide any teaching or suggestion for combining the applied art in any manner that would render obvious to the present invention. In particular, Applicants acknowledge that Figures 7 and 9 arguably show grooves extending to the lamella end, such that the end of the lamella includes grooves, and has a wavy end shaped as shown in, e.g., Figure 4.

In contrast to SANFORD, the Examiner's attention is directed to Figure 2 of RUF, as well as the accompanying text, which discloses that tip *t* should be as exactly straight-lined as possible from side wall to side wall, i.e., it should be *as close as possible to parallel to the outlet ends*, see RUF, column 4, lines 16 - 23. Thus, contrary to the teaching SANFORD, RUF expressly discloses an insertable lamella end having a specially designed tip to be exactly straight as possible, which teaches against the use of a wavy shaped lamella tip, as taught by SANFORD.

In establishing a *prima facie* case of obviousness under 35 U.S.C. § 103, it is incumbent upon the Examiner to provide a reason *why* one of ordinary skill in the art would have found it obvious to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See *Ex parte Clamp*, 227 USPO 972 (BPAI 1985) To this end, the requisite motivation must stem from some teaching, suggestion or inference in the

prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from Applicant's disclosure. See, for example, *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). Notwithstanding the Examiner's statement in the rejection that it would have been obvious to modify RUF to include the grooved surface of SANFORD, Applicants contend that the Examiner has not presented or shown a reason articulable in the art of record *why* one of ordinary skill in the art would have been led to modify RUF in a manner contrary to its express disclosure. Moreover, Applicants note that an assertion that one ordinarily skilled in the art might combine the arrangements to tradeoff the benefits of one arrangement to gain certain benefits of the other arrangement is not a reason presented in the art of record, and therefore cannot be relied upon as motivation or rationale to support a rejection under 35 U.S.C. § 103(a).

It is respectfully submitted that the courts have long held that it is impermissible to use Applicants' claimed invention as an instruction manual or "template" to piece together teachings of the prior art so that the claimed invention is purportedly rendered obvious. See *In re Fritch*, 972 R.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

Because RUF expressly discloses that the surfaces should be parallel in order to obtain the desired operation of the headbox, Applicants submit that the modification asserted by the Examiner is contrary to the express disclosure of RUF. That is, because SANFORD discloses a lamella having two grooved surfaces, Applicants submit that the asserted modification would be contrary to the express intention of RUF that tip t to be as exactly straight-lined as possible.

Applicants note that the specifically described arrangement enables RUF to operate in its desired manner, and there is no teaching or suggestion that utilizing a grooved

surfaced lamella would enable to RUF to continue operating as intended. Thus, Applicants submit that the art of record fails to provide the requisite motivation or rationale for combining the art of record in the manner asserted by the Examiner. In particular, as the asserted combination appears to be contrary to express disclosure of RUF, Applicants submit that the instant rejection is improper and should be withdrawn.

Thus, Applicants submit that, as the art of record fails to teach or suggest the asserted modification of RUF in view of SANFORD, no proper combination of these applied documents can render unpatentable the invention recited in at least independent claims 1, 22, and 44. Moreover, as no proper combination of RUF in view of SANFORD renders unpatentable the combination of features with regard to the recited lamella and headbox, no proper combination of RUF in view of SANFORD can render unpatentable claims directed to the subject matter related to the arrangement of the lamella elements and/or arrangement of the lamella within the headbox, as recited in at least claims 12, 32, 46, and 51 - 53. Therefore, Applicants submit that no proper modification of RUF in view of SANFORD teaches or suggests, *inter alia*, said at least one structure is integrally formed in said structured end and comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 12, said at least one structure is integrally formed in said structured surface and comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 32; said at least one structure is integrally formed in said structured surface and comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and

essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; said structured end comprises a grooved surface, as recited in claim 51; structured surface comprises a grooved surface, as recited in claim 52; and said structured surface comprises a grooved surface, as recited in claim 53.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 12, 32, 46, and 51 - 53 under 35 U.S.C. § 103(a) and indicate the allowability of these claims in next official action.

2. Over Ruf

Applicants traverse the rejection of claims 4 - 10, 13, 14, 16, 24 – 30, 33, 34, 36, 43, and 45 – 47 under 35 U.S.C. § 103(a) as being unpatentable over RUF. The Examiner asserts that the features recited in the instant claims are merely obvious design variants of the lamellae of RUF. Applicants traverse the Examiner's assertions.

Applicants note that, as RUF fails to anticipate the invention, as discussed above, and as RUF fails to provide any teaching or suggestion for modifying its design to integrally form the structures of the lamella in or on the surface of the lamella, as recited in at least independent claims 1, 22, and 44, no proper modification of RUF can render unpatentable the instant invention.

Moreover, Applicants respectfully traverse the Examiner's assertions that the above-noted claims are merely obvious design variants. Applicants note that, as discussed above, RUF discloses that the lamella end should be as straight as possible, whereas the instant invention provides a structured end. Moreover, as the straight end of RUF is provided to produce certain flows patterns in the suspension, there is no teaching or suggestion that modifications that may have been obvious in RUF would have been

obvious in the present invention.

Because the art of record fails to provide any teaching or suggestion for modifying a lamella in accordance with at least independent claims 1, 22, and 44, as now amended, Applicants submit that the applied art fails to render unpatentable the combination of features recited in the identified dependent claims.

As the art of record fails to teach or suggest the asserted modifications of either RUF, no proper modification of these documents can render unpatentable the invention recited in at least independent claims 1, 22, and 44. Moreover, as no proper modification of RUF renders unpatentable the combination of features with regard to the recited lamella and headbox, no proper modification of RUF can render unpatentable claims directed to the subject matter related to the arrangement of the lamella elements and/or arrangement of the lamella within the headbox, as recited in at least claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47. Therefore, Appellants submit that no proper modification of RUF teaches or suggests, *inter alia*, said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface, as recited in claim 4; said angle is between about 2.5° to 5°, as recited in claim 5; said downstream lamella end has a height of between about 0.3 mm and 1.0 mm, as recited in claim 6; the height is between about 0.4 mm and 0.6 mm, as recited in claim 7; said height is determined from a distance between an end of said sloped portion and said second surface, as recited in claim 8; said lamella has a predominant lamella thickness of between about 2 mm and 6 mm, as recited in claim 9; said predominant thickness is about 4 mm, as recited in claim 10; said lamella is composed of at least one high-performance polymer, as recited in claim 13; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone

(PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 14; in combination with the headbox, wherein a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about 3 m/s, as recited in claim 16; said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface, as recited in claim 24; said angle is between about 2.5° to 5°, as recited in claim 25; said downstream lamella end has a height of between about 0.4 mm and 0.6 mm, as recited in claim 26; the height is about 0.5 mm, as recited in claim 27; said height is determined from a distance between an end of said sloped portion and said second surface, as recited in claim 28; said lamella has a predominant lamella thickness of between about 2 mm and 6 mm, as recited in claim 29; said predominant thickness is about 4 mm, as recited in claim 30; said lamella is composed of at least one high-performance polymer, as recited in claim 33; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 34; a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about 3 m/s, as recited in claim 36; wherein said lamella is pivotably mounted in said headbox nozzle, as recited in claim 43; said sloped surface is obliquely oriented relative to said first surface at an angle of between about 1.5° to 6° to said first surface, as recited in claim 45; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; and said downstream lamella end has a height, determined from a distance between an end of said sloped portion and said second surface, of between about 0.4 mm and 0.6 mm, as recited in claim

47.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 under 35 U.S.C. § 103(a) and indicate that these claims are allowable.

Application is Allowable

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

Authorization to Charge Deposit Account

The undersigned authorizes the charging of any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, to Deposit Account No. 19 - 0089 in order to maintain pendency of this application.

CONCLUSION

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 1 – 53. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Further, any amendments to the claims which have been made in this response and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no

estoppel should be deemed to attach thereto.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully submitted,
Wolfgang RUF et al.

A handwritten signature in black ink, appearing to be 'Neil F. Greenblum', written over a horizontal line.

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